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## PATENT SPECIFICATION



Application Date: July 2, 1942. No. 9145/42,

**558,584**

Complete Specification Left: July 2, 1943.

Complete Specification Accepted: Jan. 12, 1944.

### PROVISIONAL SPECIFICATION

#### Improvements in or relating to Walls or like Structures

I, Sir EDWIN AIREY, Knt., of Eldon House, Woodhouse Lane, Leeds, 2, in the County of York, a British Subject, do hereby declare the nature of this invention to be as follows:—

This invention relates to walls or like structures which are built up of concrete or other slabs.

It is the usual practice when building the above structures with slabs to erect or lay the latter so that they are butt jointed together with or without mortar or other material at the joint.

According to the present invention a wall or like structure is constructed by a method according to which slabs are arranged in overlapping relationship and furnish a stepped outer and/or inner surface. The arrangement may be such that a water resisting joint is furnished with or without the use of joint sealing means.

The invention may include a method of forming a wall or like structure of slabs, consisting in rebating one or both of the longitudinal edges of each slab and constructing them so that an overlapping relationship is provided between slabs when erected in position and a stepped appearance furnished on the outer and/or inner surfaces.

The slabs are all inclined transversely, may support one another and/or may be supported by other means. In the formation of walls the slabs are arranged between posts or other uprights and may be wedged at one or both ends.

In one particular form of wall construction, concrete or other posts are formed of T-shape in cross section and erected at predetermined intervals with the head of the T on the outer face of the building structure. The posts may be separate units or form part of structural sections. Slabs having plain edges are placed between the posts so that they are inclined rearwardly towards their upper edges and overlap one another a given amount. The slabs may be held on the inner side by pegs, projections or other means so that their inclination forces the lower outer edges to bear against the ribs forming the head of the posts, whereby the slabs cannot slip down out of position.

Wedges may be driven in between the slab ends and the posts. When the space between each pair of posts is filled to the desired height, overlapping joints are thus provided between slabs and a stepped formation on the outer and inner wall faces. Any spaces between the slabs and the posts may be filled in with mortar or other material.

The inner face of the wall may be covered by means extending between or over the posts or attached to wood or other fillets secured against the stepped edges of the slabs. For example, plaster laths, expanded metal or their equivalent are secured to the posts or fillets and plastered.

In a modification, the ribs of the posts are serrated on their inner faces to form shoulders to support the slabs and a flush joint with the inclined faces of the slabs. Straight or serrated retention fillets may be arranged on the posts down the inner sides of the slabs.

Alternatively, a post may be formed with grooves of straight or serrated formation to receive slabs, which are dropped in from the top, tilted and slipped down into position or slipped horizontally into slots in the base of the groove in one post and then moved longitudinally until the opposite ends of the slabs enter their groove.

In a further modification, the longitudinal edge of a slab is rebated to receive the plain, rebated or otherwise shaped edge of the next slab and form an overlapped joint. If desired a slab may be rebated on one longitudinal edge only or on both edges.

In a modification the face of each slab, along one longitudinal edge, may have a rib or stepped-up portion to butt up against the underside of an adjacent overlapping slab or to enter a rebate in such slab. The rebate may be the same width as the rib, or a greater width to provide a slight overhang on the part of the upper slab. Alternatively, a tapered or partially tapered joint may be used with or without a bitumastic or other filling.

A wall or like structure constructed as above may be modified in a variety of

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ways without departing from the scope of the invention and provides stability with a good appearance, lightness and ease of erection, with or without mortar, a 5 bitumastic filling or equivalent means at the joints. The slabs may have plain or other faces and be constructed with or

without reinforcement and cavity structures are constructed in a simple manner.

Dated this 1st day of July, 1942.

W FAIRBURN-HART & CO..

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75, Chancery Lane, London, W.C.2.

## COMPLETE SPECIFICATION

### Improvements in or relating to Walls or like Structures

10 I, Sir ENWIN AIREY, Knt., of Eldon House, Woodhouse Lane, Leeds, 2, in the County of York, a British Subject, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to walls or like upright structures which are built up of concrete or other slabs.

20 It is the usual practice when building the above structures with slabs to erect or lay the latter so that their edges are butt jointed together with or without mortar or other material at the joint. Sometimes the edges are rebated.

According to the present invention a wall or like structure is constructed by a method according to which slabs are arranged between upright supports with their horizontal edges in overlapping relationship and each slab inclined bodily rearwardly from its lower edge which butts against integral ribs on the supports 30 on the outer side of the wall and held in position by retaining means on the inside of the wall which maintain a close joint between the overlapped edges. The arrangement may be such that water 35 resisting joints are furnished with or without the use of joint sealing means. One or both of the longitudinal edges of each slab may be rebated.

The inclined slabs may support one 40 another by the wedging action of the retaining means in conjunction with the ribs. The slabs may be supported by shoulders or projections on the upright supports. In the formation of the walls 45 the slabs are arranged between posts or other uprights and may be wedged temporarily at one or both ends.

Referring now to the accompanying drawing in which several embodiments of the invention are shown by way of example only:—

Figs. 1 and 2 are respectively a part isometric and side view of one construction;

60 Figs. 3 and 4 are respectively a part

isometric and side view of a modified construction;

Fig. 5 is a part sectional front elevation of a further modified construction;

Figs. 6 to 11 are side elevations of 65 modified forms of slabs.

In one particular form of wall construction shown in Figs. 1 and 2, concrete or other posts 1 are formed of T-shape in cross section and erected at predetermined 70 intervals with the head of the Tee on the outer face of the building structure. The posts may be separate units or form part of structural sections or frames as shown. Slabs 2 having plain edges are placed 75 between the posts so that they are inclined rearwardly towards their upper edges and overlap one another a given amount. The slabs are held on the inner side by pegs 3 80 projections, wedges or other means may be employed) so that their inclination forces the lower outer edges to bear against the ribs 4 forming the head of the posts, whereby the slabs cannot slip down 85 out of position. Wedges may be driven in temporarily or permanently between the slab ends and the posts. When the space between each pair of posts is filled to the desired height, overlapping joints are thus provided between slabs and a 90 stepped formation on the outer and inner wall faces. Any spaces 5 between the slabs and the posts may be filled in with 95 mortar or other material. It will be understood the cross-sectional shape of corner posts, window and door posts, are modified to suit the construction.

The inner face of the wall may be covered by means extending between or over the posts 1 or attached to wood or 100 other fillets 6 secured to the posts against the stepped edges of the slabs, or secured to the slabs. For example, plaster laths, expanded metal or their equivalent are secured to the posts or fillets 6 and cross 105 batteus 7 and plastered, or plaster boards 8, or other prefabricated sections, are secured to such members as shown. If desired the pegs 3 may be dispensed with, the slabs held temporarily by end wedges 110 and then permanently by the fillets 6.

In the modification shown in Figs. 3 and 4, the ribs 4a of the posts 1 are serrated on their inner faces to form shoulders 9 to support the slabs and a flush joint with the inclined faces of the slabs. Straight (or serrated) retention fillets 6 are arranged on the posts down the inner sides of the slabs which may be held temporarily by wedges.

10 Alternatively, the posts 1 may be formed with grooves of straight or serrated formation to receive slabs, in which case the above constructions may be modified simply by securing the fillets 6 in position prior to the erection of the slabs or by making the fillets an integral part of the posts. To locate the slabs they are dropped in from the top, tilted and their lower edges slipped down into 20 position in front of the preceding slab. Alternatively, as shown in Fig. 5, slabs are slipped horizontally into a slot 10 in the base of the groove 11 in one post and then moved longitudinally until the 25 opposite ends of the slabs enter their groove 12.

In a modification of the slabs as shown in Fig. 6, the longitudinal edge of a slab is rebated at 13 to receive the plain edge 90 of the next slab and form an overlapped joint. If desired a slab may be rebated on both longitudinal edges as shown in Fig. 7.

In the modification shown in Fig. 8 the 35 face of each slab, along one longitudinal edge, has a rib or stepped-up portion 14 to butt against the inner side of an adjacent overlapping slab or, as shown in Fig. 9, to enter a rebate 13 in such slab. The 40 rebate may be the same width as the rib, or a greater width to provide a slight overhang on the part of the outer slab. Alternatively, as shown in Figs. 10 and 11, a tapered or partially tapered joint 45 may be used with or without a bitumastic or other filling.

A wall or like structure constructed as above may be modified in a variety of ways without departing from the scope of 50 the invention and provides stability with a good appearance, lightness and ease of erection, with or without mortar, a bitumastic filling or equivalent means at the joints. The slabs may have plain 55 or other faces and be constructed with or without reinforcement and cavity structures are constructed in a simple manner.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to 60 be performed, I declare that what I claim is:—

1. A wall or like upright structure constructed by a method according to which 65 slabs are arranged between upright sup-

ports with their horizontal edges in overlapping relationship and each slab inclined bodily rearwardly from its lower edge which butts against integral ribs on the supports on the outer side of the wall 70 and held in position by retaining means on the inside of the wall which maintain a close joint between the overlapped edges.

2. A wall or like upright structure of 75 slabs according to Claim 1, having one or both of the longitudinal edges of each slab rebated so that an overlapping relationship is provided between slabs when erected and held in their inclined positions between upright supports.

3. A wall or like upright structure according to Claim 1 or 2, wherein the inclined slabs all support one another by the wedging action of the retaining means 85 in conjunction with the ribs on the supports.

4. A wall or like upright structure according to Claim 1 or 2, wherein all the inclined slabs are supported on shoulders 90 or projections on the upright supports.

5. A wall or like upright structure wherein slabs are arranged in overlapping relationship between posts or other uprights which provide ribs and shoulders 95 for the outer faces and lower edges of the slabs to bear against when inclined rearwardly towards their upper edges and retaining means on the posts behind the slabs to maintain a close overlapped joint. 100

6. A wall or like upright structure according to any of the preceding Claims, characterised by the upright supports or posts being substantially of T-shape in cross section. 105

7. A wall or like upright structure according to Claim 5 or 6, wherein each upright support or post is provided with a serrated rib extending down the whole or part of one or more of its faces. 110

8. A wall or like upright structure according to Claim 7, wherein the slabs rest upon the shoulders formed by the serrations so as to overlap one another.

9. A wall or like upright structure 115 according to Claim 5, wherein the ends of the slabs are located in grooves in the upright supports or posts.

10. A wall or like upright structure according to any of the preceding Claims, 120 characterised by the provision of an inner wall or facing which leaves a cavity or cavities between it and the stepped inner face of the wall proper.

11. A wall or like upright structure 125 according to any of the preceding Claims, wherein the construction is such that water resisting joints are furnished with or without the use of joint sealing means.

12. A wall or like upright structure 130

according to any of the preceding Claims, wherein each slab has a rebate, a rib, taper or other formation along one or both of its horizontal edges or a combination of such formations.

13. A method of forming walls or like upright structures substantially as described.

14. A wall or like upright structure constructed as described with reference to 10 the accompanying drawings.

Dated this 30th day of June, 1943.

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75, Chancery Lane, London, W.C.2.

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*This Drawing is a reproduction of the Original on a reduced scale.*

FIG. 1.

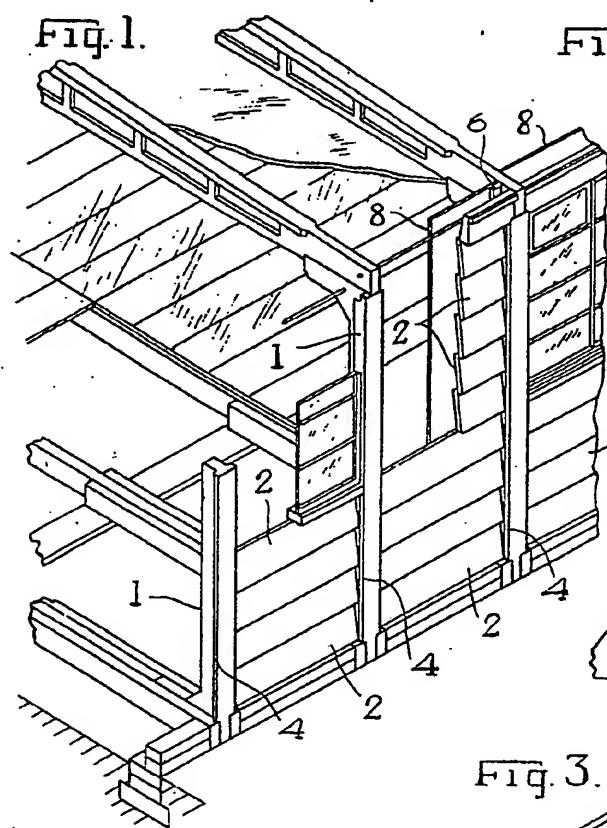


FIG. 2.

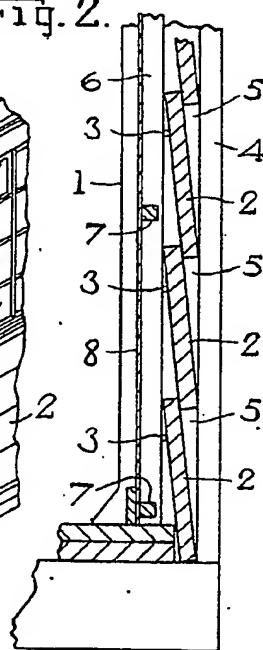


FIG. 3.

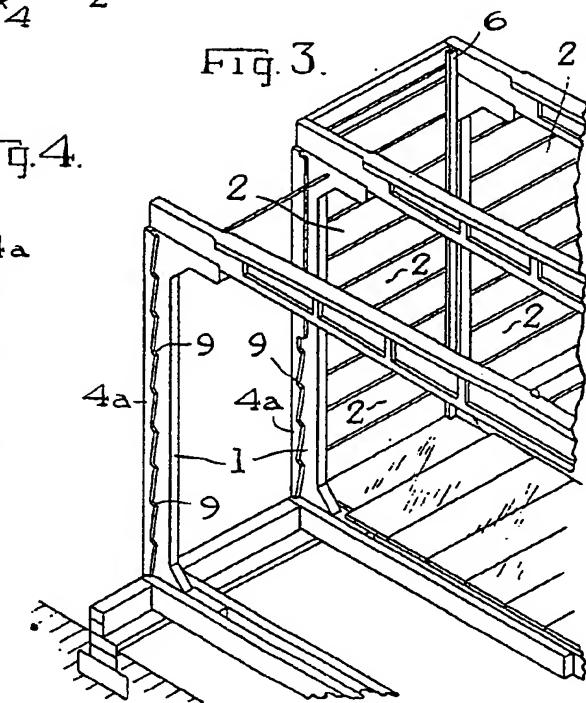
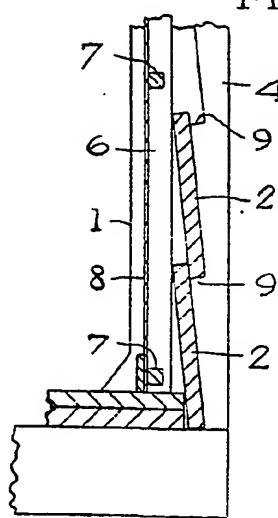


FIG. 4.



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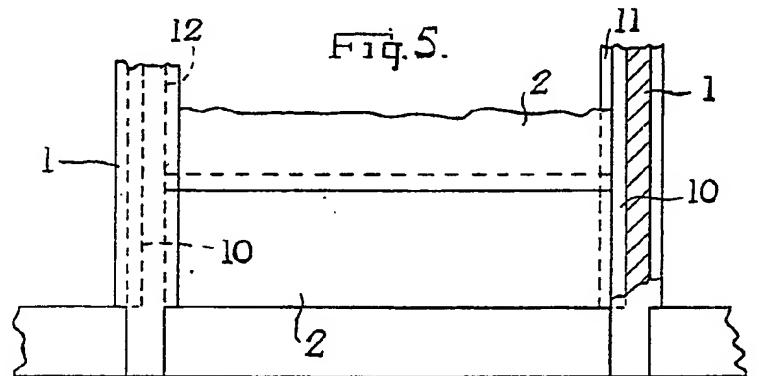


Fig. 5.

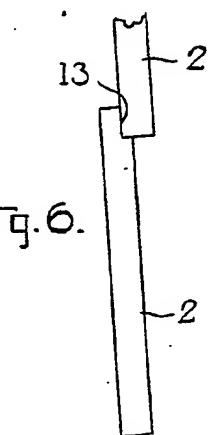


Fig. 6.

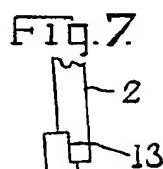


Fig. 7.

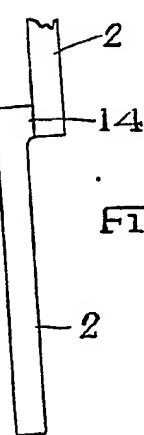


Fig. 8.

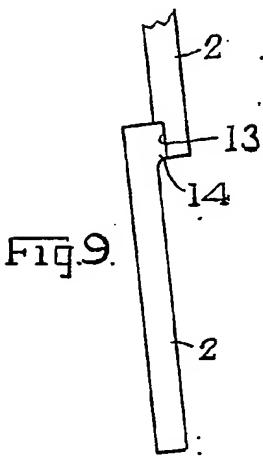


Fig. 9.

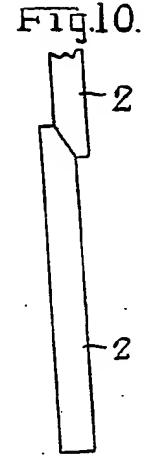


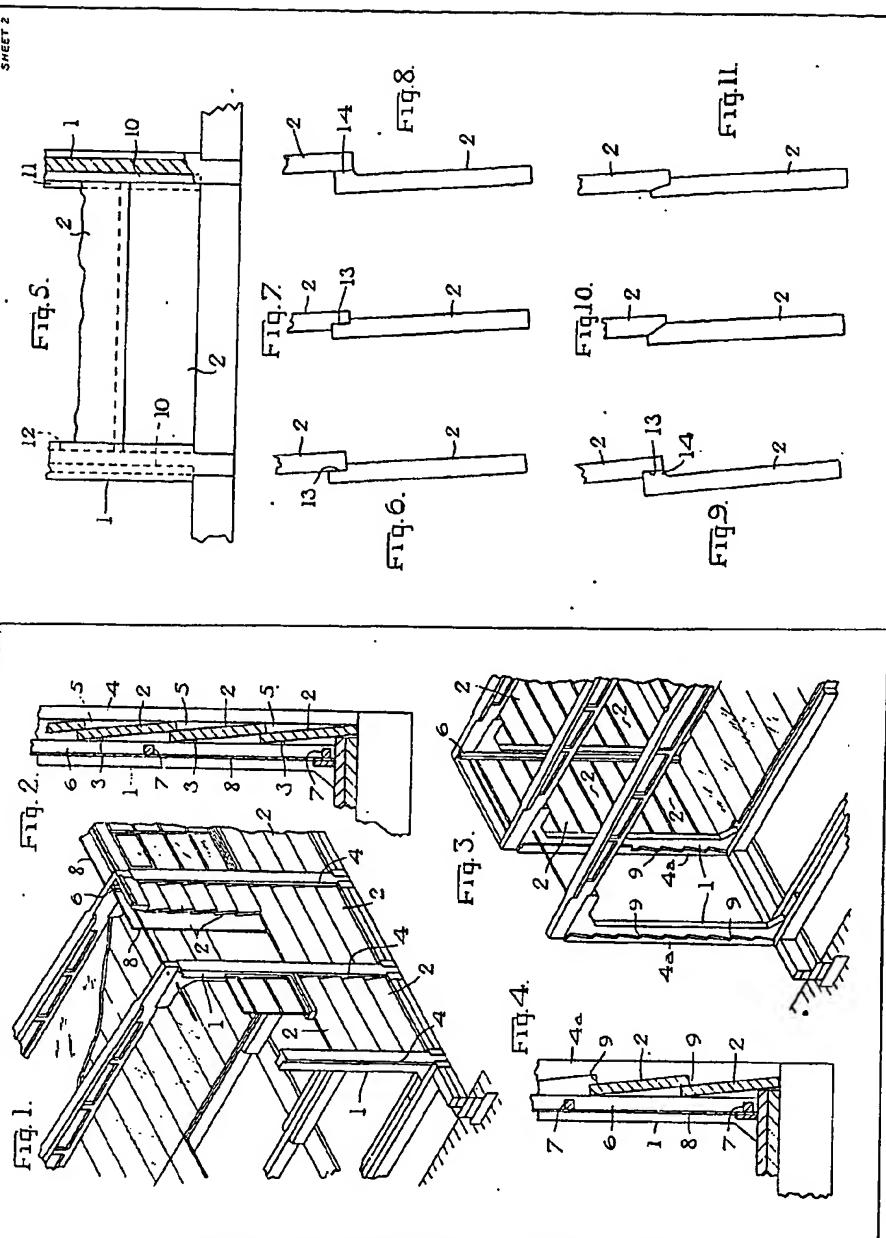
Fig. 10.



Fig. 11.

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